Comparisons of Job Characteristics

Focus Occupation: Mechanical Engineering Technicians (17-3027)
Associated Occupation: Mechanical Engineers (17-2141)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge — Similarity of Focus Occupation to Associated Occupation: 96

Focus Occupation: Mechanical Engineering Technicians (17-3027)
Associated Occupation: Mechanical Engineers (17-2141)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Engineering and Technology	5.7	21.5	16.1	<<	Extensive education and/or training may be required
Design	5.2	21.0	15.1	<<	Extensive education and/or training may be required
Mathematics	9.2	18.1	13.1	<<	Extensive education and/or training may be required
Mechanical	6.8	18.1	18.0	0	Current knowledge level may be sufficient
Physics	4.3	15.3	10.2	<<	Extensive education and/or training may be required
Production and Processing	6.0	14.2	12.6	<	Expanded education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills — Similarity of Focus Occupation to Associated Occupation: 55

Focus Occupation: Mechanical Engineering Technicians (17-3027)
Associated Occupation: Mechanical Engineers (17-2141)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Mathematics	6.2	15.3	8.4	<<	Extensive development of skills in this area may be required
Complex Problem Solving	9.1	14.8	9.7	<<	Extensive development of skills in this area may be required
Judgment and Decision Making	9.4	14.1	9.5	<<	Extensive development of skills in this area may be required
Science	4.5	13.6	7.5	<<	Extensive development of skills in this area may be required

Operations Analysis	5.0	13.0	6.8	<<	Extensive development of skills in this area may be required
Systems Evaluation	6.4	12.0	7.9	<<	Extensive development of skills in this area may be required
Technology Design	2.6	11.0	3.9	<<	Extensive development of skills in this area may be required
Programming	2.2	7.5	2.1	<<	Extensive development of skills in this area may be required
Installation	1.7	6.3	1.3	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities	Similarity of Focus Occupation to Associated Occupation: 83

Focus Occupation: Mechanical Engineering Technicians (17-3027)
Associated Occupation: Mechanical Engineers (17-2141)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Deductive Reasoning	10.6	15.8	12.2	<<	Extensive improvement in abilities may be required
Written Comprehension	11.0	15.8	11.8	<<	Extensive improvement in abilities may be required
Mathematical Reasoning	6.3	15.7	9.0	<<	Extensive improvement in abilities may be required
Information Ordering	9.9	15.4	11.4	<<	Extensive improvement in abilities may be required
Near Vision	11.1	13.3	11.8	<	Some improvement in abilities may be required
Number Facility	6.3	13.0	9.7	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	12.7	10.7	<	Some improvement in abilities may be required
Visualization	7.5	12.7	10.2	<	Some improvement in abilities may be required
Selective Attention	8.7	11.0	8.9	<	Some improvement in abilities may be required
Perceptual Speed	7.4	10.6	9.6	<	Some improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common	Similarity of Focus Occupation to Associated Occupation: 90

Focus Occupation: Mechanical Engineering Technicians (17-3027)
Associated Occupation: Mechanical Engineers (17-2141)

Work Activities	Exclusivity of Activity

Analyze engineering design problems	69
Analyze engineering test data	71
Analyze technical data, designs, or preliminary specifications	47
Calculate engineering specifications	64
Communicate technical information	4
Conduct performance testing	66
Confer with engineering, technical or manufacturing personnel	25
Develop plans for programs or projects	31
Diagnose mechanical problems in machinery or equipment	65
Draw prototypes, plans, or maps to scale	57
Estimate cost for engineering projects	69
Evaluate engineering data	60
Examine engineering documents for completeness or accuracy	62
Follow manufacturing methods or techniques	73
Follow statistical process control procedures	73
Inspect facilities or equipment for regulatory compliance	51
Prepare technical reports or related documentation	22
Read blueprints	10
Read schematics	34
Read technical drawings	7
Read vehicle manufacturer's specifications	76
Test equipment as part of engineering projects or processes	67
Understand engineering data or reports	48
Use drafting or mechanical drawing techniques	50
Use robotics systems technology	78
Use scientific research methodology	21
Use technical information in manufacturing or industrial activities	67
Use technical regulations for engineering problems	61

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 80

Focus Occupation: Mechanical Engineering Technicians (17-3027)
Associated Occupation: Mechanical Engineers (17-2141)

Tools and Technologies	Exclusivity
Business function specific software	1
Cement and ceramics and glass industry machinery and equipment and supplies	40
Chemical evaluation instruments and supplies	10
Compressors	9
Computer data input devices	2
Computer printers	2
Computers	1
Content authoring and editing software	1

Development software	4
Electrical measuring and testing equipment	7
Electronic and communication measuring and testing instruments	14
Gas analyzers and monitors	10
Heating equipment and parts and accessories	19
Indicating and recording instruments	2
Industry specific software	1
Integrated circuits	18
Laboratory environmental conditioning equipment	24
Length and thickness and distance measuring instruments	2
Light and wave generating and measuring equipment	4
Liquid and gas flow measuring and observing instruments	15
Machine tools	7
Machinery for working wood and stone and ceramic and the like	12
Mechanical instruments	14
Metals and metallurgy and structural materials testing instruments	15
Non destructive examination equipment	13
Power tools	2
Soldering and brazing and welding machinery and supplies	6
Transducers	23
Viewing and observing instruments and accessories	4

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.